Jinko Solar Co.,Ltd.
No.1, Lane 1466, Shenchang Road,
Minhang District, Shanghai, China
Tel:+86 21 5180 8777 Fax:+86 21 5180 8600

Statement

To our respected customer eco-invention ag,

We, Jinko Solar Co., Ltd (Jinko Solar) herewith confirm that our PV module

Jinko Tiger Neo Black JKMxxxN-54HL4R-B

Jinko Tiger Neo JKMxxxN-54HL4R-V

Jinko Tiger Neo Black JKMxxxN-48HL4M-DB

Jinko Tiger Neo JKMxxxN-48HL4M-DV

with corresponding datasheet in Annex 1, can be assembled with eco-invention ag – TrapFIX mounting system, (as shown in Annex 2)

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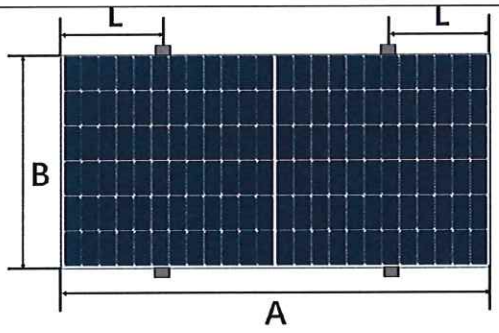
The table below illustrate clamp design requirement of Jinko's installation manual:

Length of the clamp	≥50mm
Overlap of the frame of the module	10~11mm
thickness	≥3.0mm

Clamp design requirement

The overlap of the frame of the module is not aligned with Jinko requirement, which is 8mm, influence the load capacity. The relevant installation methods and corresponding load capacity are shown in below:

Installation Method	Mounting Diagram
long side clamping (4pcs.), no rails	

Module Type	Clamps Position (mm)	Test Load (Pa)
JKMxxxN-54HL4R-B JKMxxxN-54HL4R-V	L=150~200	+1600/-1600
	L=201~300	+2400/-2400
	L=301~402	+3200/-2400
	L=403~600	+2400/-2400
JKMxxxN-48HL4M-DB JKMxxxN-48HL4M-DV	L=150~200	+1600/-1600
	L=201~300	+2400/-2400
	L=301~402	+3600/-2400
	L=403~600	+2400/-2400

Noted: Maximum Test Load = 1.5 (Safety factor according to IEC 61215) x Design Load

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The uneven vertical alignment of clamps (with one side fully compressed and the other side retaining a gap) may prevent rigid fixation of the module. Wind uplift forces could induce continuous mechanical impact between the loosely secured module and clamps/roof mounts, generating vibration-induced microcracks on cells. Therefore, Jinko Solar Co., Ltd expressly disclaims all liability for module damage, power degradation, or safety incidents arising from this design, including without limitation the faults of the engineering and/or construction and/or designing of PV system.

Disclaimer: Jinko Solar is only responsible for quality assurance within the load range specified in the above table. Any damages occurring in the event that atmospheric beyond the load range are not related to Jinko Solar.

Annex 1: Datasheet

Annex 2: Installation method

Technical Service Department

Jinko Solar

May 21st, 2025

www.jinkosolar.com

Tiger Neo

54HL4R-B

430-455 Watt

ALL-BLACK MONOFAZIALES MODUL

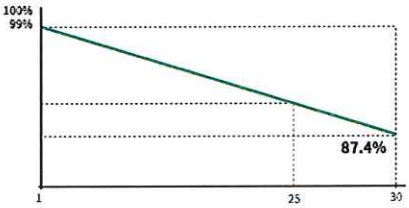
N-Typ

N-Typ Technologie

N-Typ Module mit Tunnel-Oxid Passivierungskontakten (TOPCon) bieten eine geringere LID/LeTID-Degradation und eine bessere Leistung bei schwachem Licht.

HOT 3.0 Technologie

N-Typ-Module mit der HOT 3.0-Technologie von JinkoSolar bieten eine höhere Zuverlässigkeit und Effizienz.



25 Jahre Produktgarantie | **30** Jahre lineare Leistungsgarantie | **1%** Degradierung im ersten Jahr | **0.4%** jährliche Degradation über 30 Jahre

Beständigkeit gegen extreme Umweltbedingungen

Hohe Salznebel- und Ammoniak-Beständigkeit.

Mechanische Belastung Erhöht

Zertifiziert, um zu widerstehen:
6000 Pa maximale statische Prüflast auf der Vorderseite
4000 Pa Rückseite max. statische Prüflast

- IEC61215:2021 / IEC61730:2023
- IEC61701 / IEC62716 / IEC60068 / IEC62804
- ISO9001:2015: Qualitätsmanagementsystem
- ISO14001:2015: Umweltmanagementsystem
- ISO45001:2018: Managementsysteme für Sicherheit und Gesundheit bei der Arbeit

SMBB Technologie

Mehr Modulleistung und Zuverlässigkeit dank verbesserter Lichtabsorption und verbesserten Stromtransport.

Anti-PID-Garantie

Minimiert die durch PID-Phänomene verursachte Degradationsgefahr durch Optimierung der Zellproduktionstechnologie und der Materialkontrolle.

CLEAN ENERGY COUNCIL MEMBER

POSITIVE QUALITY

EU-JKM430-455N-54HL4R-B-F8-DE

54HL4R-B 430-455 Watt

Mechanische Eigenschaften

Zellentyp	Monokristallin N-Typ
Zellenanzahl	108 (54×2)
Maße	1762×1134×30 mm
Gewicht	21.0 kg
Glas Vorderseite	3.2 mm, Antireflexionsbeschichtung, hohe Transmission, eisenarm, gehärtetes Glas
Rahmen	Anodisierte Aluminiumlegierung
Anschlusskasten	Schutzklasse IP68
Schutzklasse	Klasse II
IEC-Brandschutz Typ	Klasse C
Anschlusskabel	4.0 mm² (+): 400 mm , (-): 200 mm oder kundenspezifische Länge

Verpackungseinheiten

Abmessungen der Paletten	1792×1140×1249 mm
Details zur Verpackung (Zwei Paletten = Ein Stapel)	37 Stück/Paletten, 74 Stück/Stapel, 962 Stück/40'HQ Container

Spezifikationen (STC)

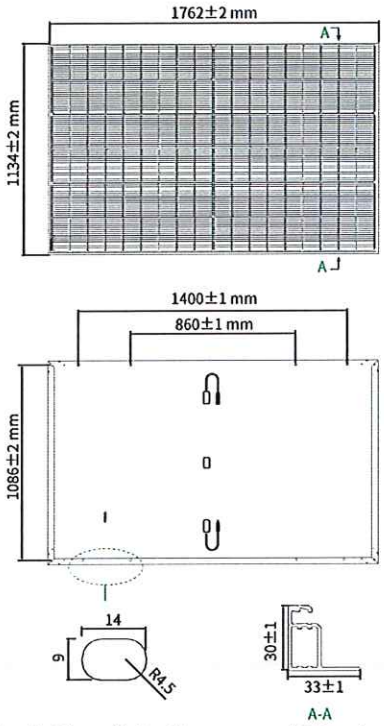
Maximale Leistung - Pmax [Wp]	430	435	440	445	450	455
Maximale Spannung - Vmp [V]	32.58	32.78	32.99	33.19	33.39	33.58
Maximale Strom - Imp [A]	13.20	13.27	13.34	13.41	13.48	13.55
Leerlaufspannung - Voc [V]	39.16	39.36	39.57	39.77	39.97	40.17
Kurzschlussstrom - Isc [A]	13.65	13.72	13.80	13.87	13.94	14.01
Modulwirkungsgrad STC [%]	21.52	21.77	22.02	22.27	22.52	22.77
Leistungstoleranz	0 ~ + 3 %					
Temperaturkoeffizient Pmax	-0.29 %/°C					
Temperaturkoeffizient Voc	-0.25 %/°C					
Temperaturkoeffizient Isc	0.045 %/°C					

STC: Bestrahlungsstärke 1000W/m², Zellentemperatur 25°C, AM=1.5

Anwendungsbedingungen

Betriebstemperatur	-40 v°C ~ +70 °C
Maximale Systemspannung	1000 VDC (IEC)
Rückstromsicherung	25 A

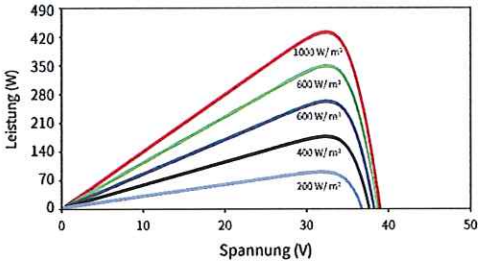
Technische Zeichnungen



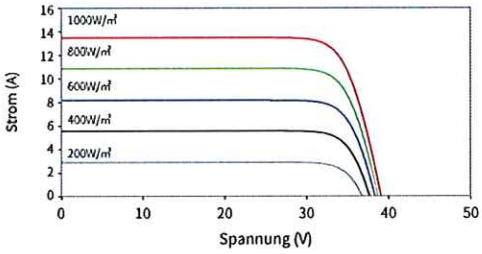
Hinweis: Die spezifischen Abmessungen und Toleranzbereiche sind den entsprechenden Detailzeichnungen der Module zu entnehmen.

Elektrische Leistung

Leistungs-Spannungs-Kurven (54HL4R-B 445W)



Strom-Spannungs-Kurven (54HL4R-B 445W)



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Dieses Dokument ist eine unverbindliche Übersetzung aus dem Englischen. Im Falle einer Abweichung vom Originaltext ist immer die englische Version maßgebend.

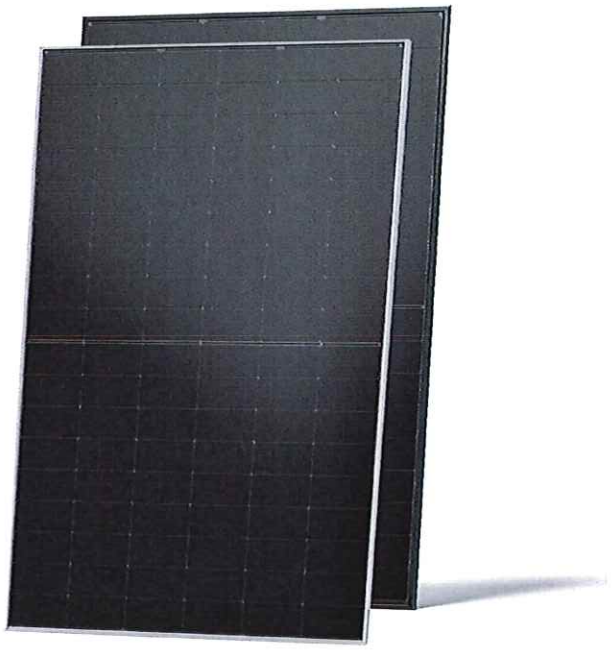
www.jinkosolar.com

Tiger Neo

54HL4R-(V)

435-460 Watt

MONOFAZIALES MODUL



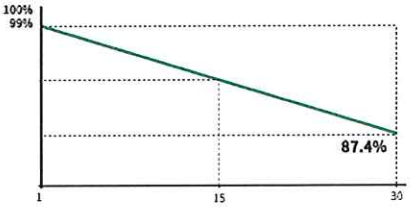
N-Typ

N-Typ Technologie

N-Typ Module mit Tunnel-Oxid Passivierungskontakten (TOPCon) bieten eine geringere LID/LeTID-Degradation und eine bessere Leistung bei schwachem Licht.

HOT 3.0 Technologie

N-Typ-Module mit der HOT 3.0-Technologie von JinkoSolar bieten eine höhere Zuverlässigkeit und Effizienz.



15 Jahre Produktgarantie | **30** Jahre lineare Leistungsgarantie | **1%** Degradation im 1. Jahr | **0.4%** Jährliche Degradation über 30 Jahre

Beständigkeit gegen extreme Umweltbedingungen

Hohe Salznebel- und Ammoniak-Beständigkeit.

Mechanische Belastung Erhöht

Zertifiziert, um zu widerstehen:
6000 Pa maximale statische Prüflast auf der Vorderseite
4000 Pa Rückseite max. statische Prüflast

- IEC61215:2021 / IEC61730:2023
- IEC61701 / IEC62716 / IEC60068 / IEC62804
- ISO9001:2015: Qualitätsmanagementsystem
- ISO14001:2015: Umweltmanagementsystem
- ISO45001:2018: Managementsysteme für Sicherheit und Gesundheit bei der Arbeit

SMBB Technologie

Mehr Modulleistung und Zuverlässigkeit dank verbesserter Lichtabsorption und verbesserten Stromtransport.

Anti-PID-Garantie

Minimiert die durch PID-Phänomene verursachte Degradationsgefahr durch Optimierung der Zellproduktionstechnologie und der Materialkontrolle.

CLEAN ENERGY COUNCIL MEMBER

POSITIVE QUALITY

EU-JKM435-460N-54HL4R-(V)-F8-DE

54HL4R-(V) 435-460 Watt

Mechanische Eigenschaften

Zellentyp	Monokristallin N-Typ
Zellenanzahl	108 (54×2)
Maße	1762×1134×30 mm
Gewicht	21.0 kg
Glas Vorderseite	3.2 mm, Antireflexionsbeschichtung, Transmission, eisenarm, gehärtetes Glas
Rahmen	Anodisierte Aluminiumlegierung
Anschlusskasten	Schutzklasse IP68
Schutzklasse	Klasse II
IEC-Brandschutz Typ	Klasse C
Anschlusskabel	4.0 mm² (+): 400 mm , (-): 200 mm oder kundenspezifische Länge

Verpackungseinheiten

Abmessungen der Paletten	1792×1140×1249 mm
Details zur Verpackung (Zwei Paletten = Ein Stapel)	37 Stück/Paletten, 74 Stück/Stapel, 962 Stück/40'HQ Container

Spezifikationen (STC)

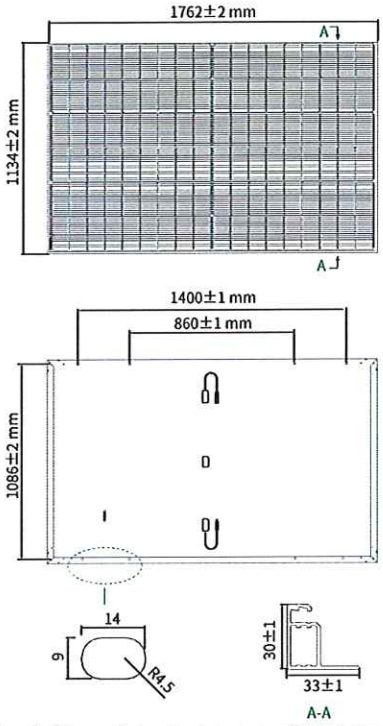
Maximale Leistung - Pmax [Wp]	435	440	445	450	455	460
Maximale Spannung - Vmp [V]	32.59	32.81	33.02	33.21	33.41	33.60
Maximale Strom - Imp [A]	13.35	13.41	13.48	13.55	13.62	13.69
Leerlaufspannung - Voc [V]	39.16	39.38	39.59	39.78	39.98	40.17
Kurzschlussstrom - Isc [A]	13.80	13.86	13.93	14.00	14.07	14.14
Modulwirkungsgrad STC [%]	21.77	22.02	22.27	22.52	22.77	23.02
Leistungstoleranz	0 ~ + 3%					
Temperaturkoeffizient Pmax	-0.29 %/°C					
Temperaturkoeffizient Voc	-0.25 %/°C					
Temperaturkoeffizient Isc	0.045 %/°C					

STC: Bestrahlungsstärke 1000W/m², Zellentemperatur 25°C, AM=1.5

Anwendungsbedingungen

Betriebstemperatur	-40 °C ~ +70 °C
Maximale Systemspannung	1000/1500 VDC (IEC)
Maximale Serienabsicherung	25 A

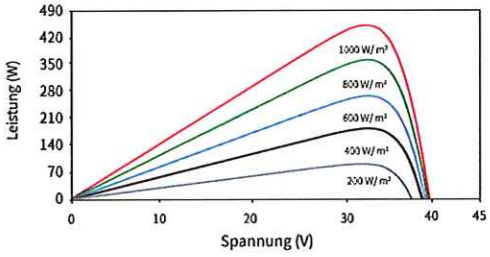
Technische Zeichnungen



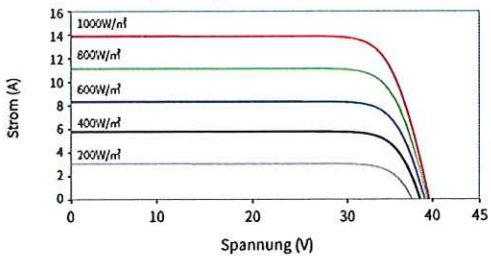
Hinweis: Die spezifischen Abmessungen und Toleranzbereiche sind den entsprechenden Detailzeichnungen der Module zu entnehmen.

Elektrische Leistung

Leistungs-Spannungs-Kurven (54HL4R-(V) 450W)



Strom-Spannungs-Kurven (54HL4R-(V) 450W)



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Solar
JinKO

TIGER Neo

48HL4M-DB

450-475 Watt

ALL BLACK MONO-FACIAL MODULE
WITH DUAL GLASS

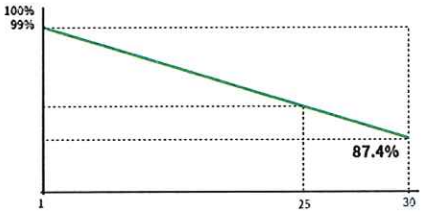
N-type

N-type Technology

N-type modules with Tunnel Oxide Passivating Contacts (TOPCon) technology offer lower LID/LeTID degradation and better low light performance.

HOT 3.0 Technology

N-type modules with JinkoSolar's HOT 3.0 technology offer better reliability and efficiency.



25Year Product Warranty | **30**Year Linear Power Warranty | **1**% First-year Degradation | **0.40**% Annual Degradation Over 30 Years

Durability Against Extreme Environment

High salt mist and ammonia resistance.

Mechanical Load Enhanced

Certified to withstand:
6000 Pa front side max static test load
4000 Pa rear side max static test load

- IEC61215:2021 / IEC61730:2023
- IEC61701 / IEC62716 / IEC60068 / IEC62804
- ISO9001:2015: Quality Management System
- ISO14001:2015: Environment Management System
- ISO45001:2018: Occupational health and safety management systems

SMBB Technology

Better light trapping and current collection to improve module power output and reliability.

Anti-PID Guarantee

Minimizes the chance of degradation caused by PID phenomena through optimization of cell production technology and material control.

CLEAN ENERGY COUNCIL MEMBER

POSITIVE QUALITY

JKM450-475N-48HL4M-DB-Z1-EU

48HL4M-DB 450-475 Watt

Mechanical Characteristics

Cell Type	N- type Mono-crystalline
No. of cells	96 (48×2)
Dimensions	1762×1134×30 mm
Weight	24.0 kg
Front Glass	2.0 mm, Anti-reflection Coating
Back Glass	2.0 mm, Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68 Rated
Protection Class	Class II
IEC Fire Type	Class C
Connector Type	JK03M/JK03M2/Others*
Output Cables (Including Connector)	4.0 mm² (+): 400 mm , (-): 200 mm or Customized Length

* MC4 and MC4-EVO2 available upon request and subject to availability

Packaging Configuration

Pallet Dimensions	1792×1140×1249 mm
Packing Detail (Two pallets = One stack)	37 pcs/pallets, 74 pcs/stack, 962 pcs/ 40'HQ Container

Specifications (STC)

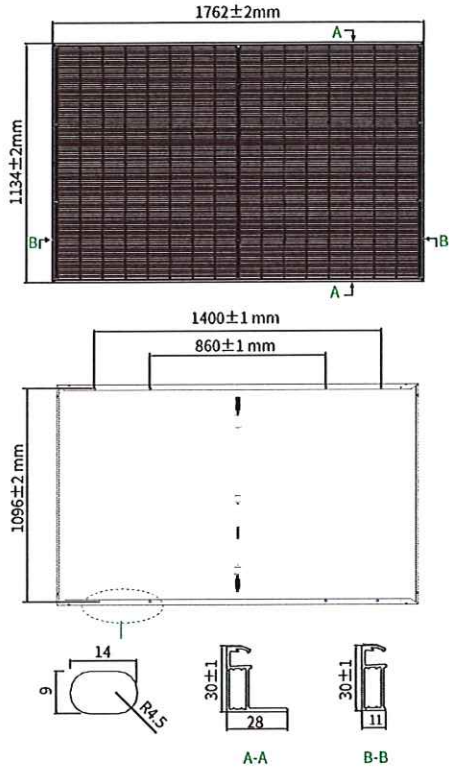
Maximum Power - Pmax [Wp]	450	455	460	465	470	475
Maximum Power Voltage - Vmp [V]	30.25	30.48	30.71	30.94	31.17	31.40
Maximum Power Current - Imp [A]	14.88	14.93	14.98	15.03	15.08	15.13
Open-circuit Voltage - Voc [V]	36.04	36.21	36.38	36.55	36.72	36.89
Short-circuit Current - Isc [A]	15.76	15.81	15.86	15.91	15.96	16.01
Module Efficiency STC [%]	22.52	22.77	23.02	23.27	23.52	23.77
Power Tolerance	0 ~ + 3 %					
Temperature Coefficients of Pmax	-0.29 %/°C					
Temperature Coefficients of Voc	-0.25 %/°C					
Temperature Coefficients of Isc	0.045 %/°C					

STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5

Application Conditions

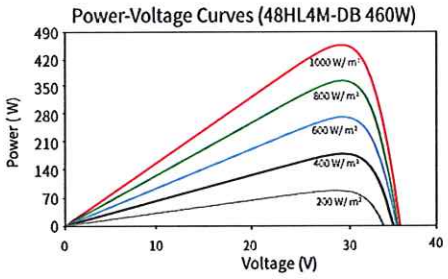
Operating Temperature	-40 °C ~ +70 °C
Maximum System Voltage	1500 VDC (IEC)
Maximum Series Fuse Rating	30 A

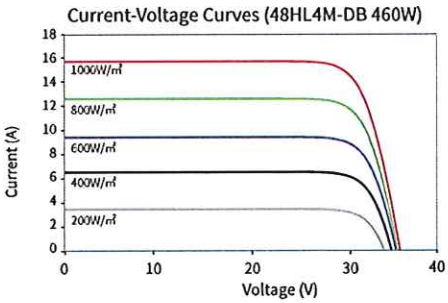
Engineering Drawings



*Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

Electrical Performance





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Note: Please read the safety and installation manual before using the product. We reserve the right of final interpretation. The specifications in this datasheet are subject to change without notice.

JKM450-475N-48HL4M-DB-Z1-EU

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Solar
JinKO

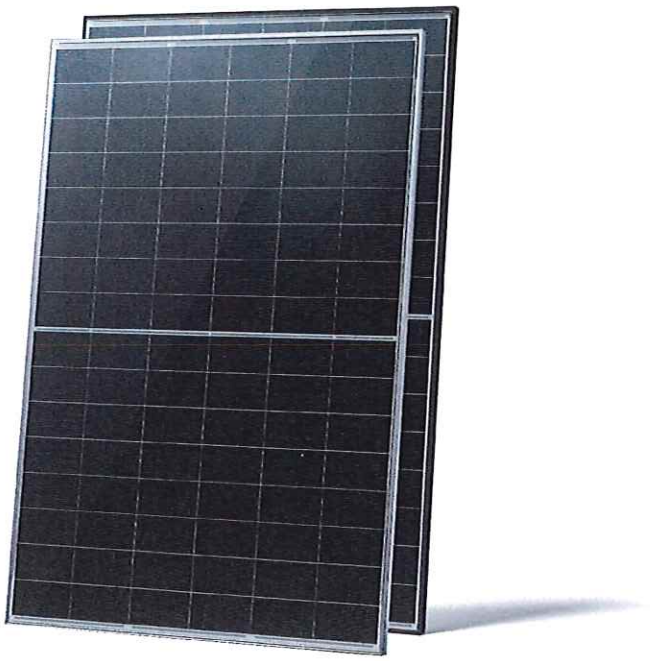
TIGER Neo

48HL4M-DV

450-475 Watt

MONO-FACIAL MODULE
WITH DUAL GLASS

N-type



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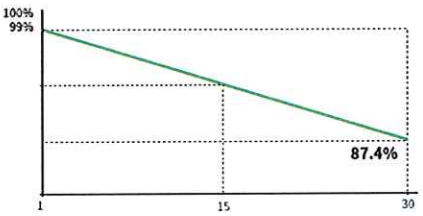

15Year Product Warranty | **30**Year Linear Power Warranty | **1**% First-year Degradation | **0.40**% Annual Degradation Over 30 Years

Durability Against Extreme Environment

High salt mist and ammonia resistance.

Mechanical Load Enhanced

Certified to withstand:
6000 Pa front side max static test load
4000 Pa rear side max static test load

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SMBB Technology

Better light trapping and current collection to improve module power output and reliability.

Anti-PID Guarantee

Minimizes the chance of degradation caused by PID phenomena through optimization of cell production technology and material control.

CLEAN ENERGY COUNCIL MEMBER

POSITIVE QUALITY

JKM450-475N-48HL4M-DV-Z1-EN

48HL4M-DV 450-475 Watt

Mechanical Characteristics

Cell Type	N- type Mono-crystalline
No. of cells	96 (48×2)
Dimensions	1762×1134×30 mm
Weight	24.0 kg
Front Glass	2.0 mm, Anti-reflection Coating
Back Glass	2.0 mm, Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68 Rated
Protection Class	Class II
IEC Fire Type	Class C
Connector Type	JK03M/JK03M2/Others*
Output Cables (Including Connector)	4.0 mm² (+): 400 mm , (-): 200 mm or Customized Length

* MC4 and MC4-EVO2 available upon request and subject to availability

Packaging Configuration

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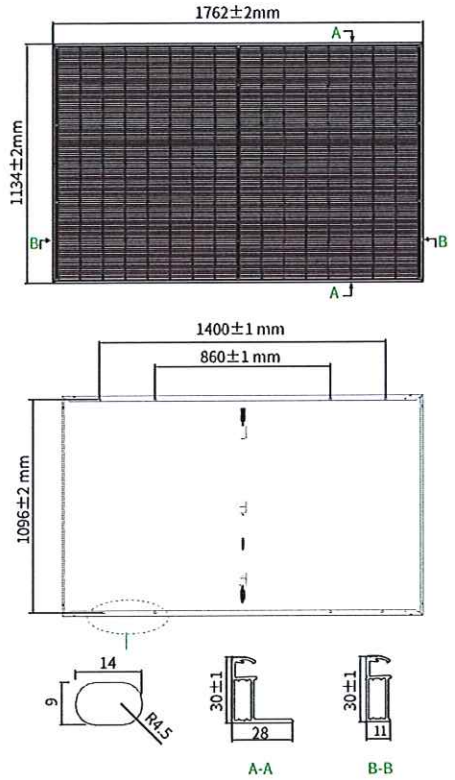
Maximum Power Current - Imp [A]	14.88	14.93	14.98	15.03	15.08	15.13
Open-circuit Voltage - Voc [V]	36.04	36.21	36.38	36.55	36.72	36.89
Short-circuit Current - Isc [A]	15.81	15.86	15.91	15.96	16.01	16.06
Module Efficiency STC [%]	22.52	22.77	23.02	23.27	23.52	23.77
Power Tolerance	0 ~ + 3 %					
Temperature Coefficients of Pmax	-0.29 %/°C					
Temperature Coefficients of Voc	-0.25 %/°C					
Temperature Coefficients of Isc	0.045 %/°C					

STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5

Application Conditions

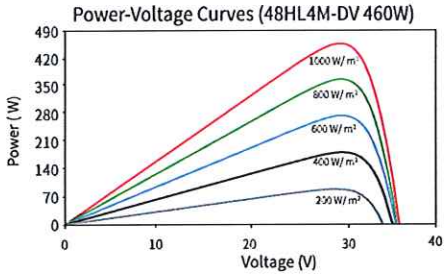
Operating Temperature	-40 °C ~ +70 °C
Maximum System Voltage	1500 VDC (IEC)
Maximum Series Fuse Rating	30 A

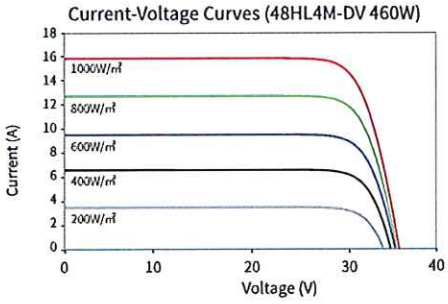
Engineering Drawings



*Note: For specific dimensions and tolerance ranges, please refer to the corresponding detailed module drawings.

Electrical Performance





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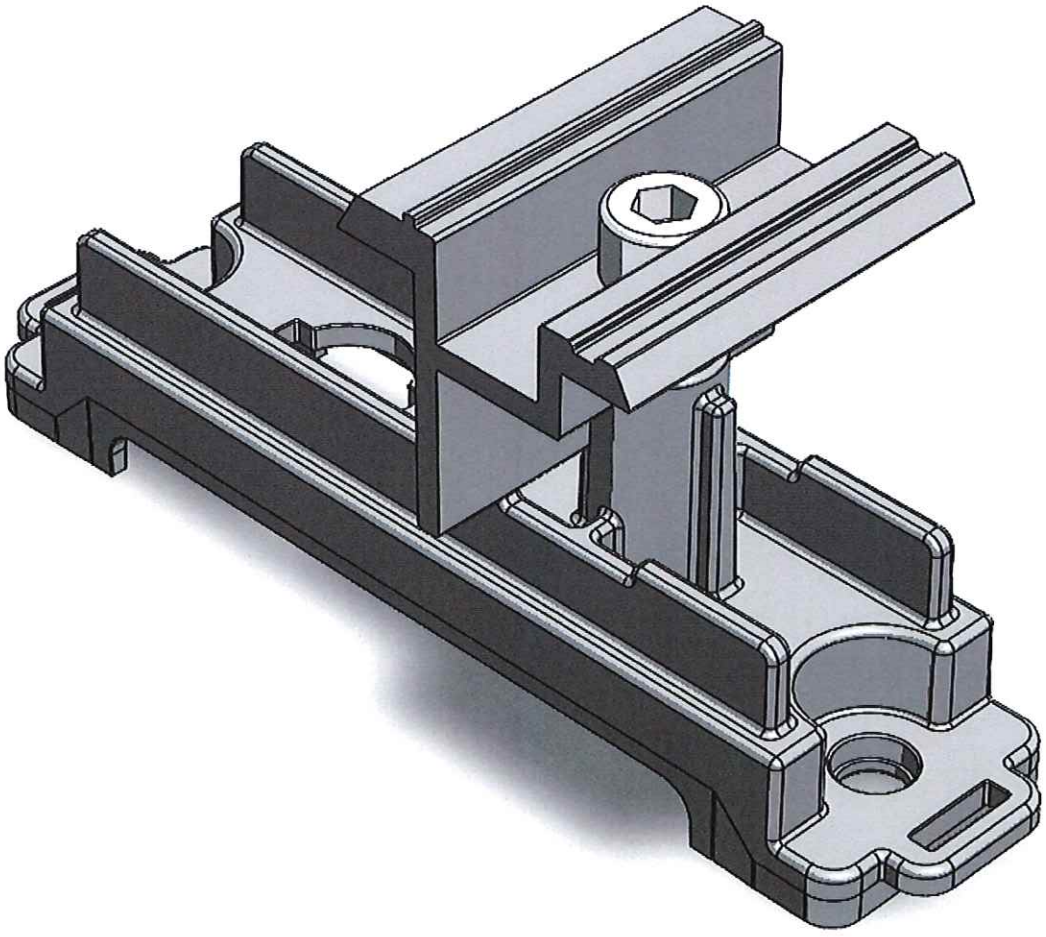
Note: Please read the safety and installation manual before using the product. We reserve the right of final interpretation. The specifications in this datasheet are subject to change without notice.

TrapFIX

Smarter than the others

Mounting instructions TrapFIX

25-V02



1. General safety instructions

Intended use: The TrapFIX system is intended exclusively for the mounting of PV modules in landscape orientation on metal roofs made of trapezoidal sheet metal. Any other use of the TrapFIX system is not considered as intended use. Approval from the module manufacturer is always required for the use of the TrapFIX system.

Mounting instructions: The specifications in the mounting instructions for the TrapFIX system must be strictly complied with. Always use the latest version of the mounting instructions, which are available on the website (www.eco-invention.ch) or on request by email (trapfix@eco-invention.ch). A copy of the mounting instructions must always be available during mounting. The module manufacturer's mounting instructions must also be complied with.

Personnel requirements: The mounting work may only be carried out by qualified and competent persons who can ensure that the work is carried out in accordance with the applicable regulations. The specifications in the mounting instructions, the project report, the planning documents and other project specifications must be strictly complied with. Mounting must be carried out by at least two persons to ensure that rapid assistance can be provided in case of an accident.

Occupational safety: All relevant occupational health and safety regulations (e.g. accident prevention regulations, occupational health and safety regulations, standards, construction regulations, environmental protection regulations, regulations of employers' liability insurance associations etc.) must be complied with. In particular, personal protective equipment must be worn during mounting in accordance with the relevant regulations (e.g. safety helmet, safety shoes, gloves etc.) and fall protection and/or safety gear must be installed in accordance with the relevant regulations. Mounting work must not be carried out or continued in poor weather conditions, wet conditions, sub-zero temperatures or windy conditions.

Static requirements: The static requirements of the project must be checked before mounting, in particular the load-bearing capacity of the building. Weak points (e.g. roof windows, skylights, ventilation flaps etc.) must be secured in a similar way as the edge of the roof. If the roof structure is not sufficiently load-bearing, load distribution aids must be used.

Environmental protection: The local and national construction regulations, standards and provisions relating to environmental protection must be complied with.

2. Important mounting and maintenance instructions

Requirements for the trapezoidal sheet metal roof: TrapFIX may only be used for mounting of modules in landscape orientation on trapezoidal sheet metal roofs. The trapezoidal sheet metal roof must be checked for tightness, rust, delamination and other weak points or on-site problems before mounting. The trapezoidal sheet metal roof must in any case have a minimum metal strength of 0.5 mm (sheet steel) and 0.7 mm (sheet aluminium).

Requirements for thin sheet metal screws: The TrapFIX system must be attached to the trapezoidal sheet metal roof using stainless thin sheet metal screws. The minimum length of the thin sheet metal screws is 25 mm. The diameter must be 5.5 or 6 mm. The thin sheet metal screw must be fitted with a sealing washer with a diameter of 16 mm. The instructions of the screw manufacturer must also be observed. The use of EJOFAST JF3-2-5.5x25 or JF3-2-6.0x25 from EJOT or the RP-T2 thin sheet metal screw 6.0x25 from Reisser is recommended.

Use of a mounting jig: A suitable mounting jig from the supplier must be used to mount the TrapFIX system. The correct use of such a mounting jig ensures that the required distances and tolerances are maintained. Otherwise, static problems, unfavorable force effects or unstable attachments may occur.

Requirements for the PV modules: The frame height of the PV modules must be between 30 - 40 mm. The PV modules may have a maximum width of 1.34 m. The module manufacturer must have approved its PV modules for use with the TrapFIX system and its instructions must be observed. The PV modules must be capable of withstanding the wind/snow loads at the project location. The clamping zones of the PV modules must be strictly adhered to. The clamping zones must be checked manually and are not taken into consideration by the planning software.

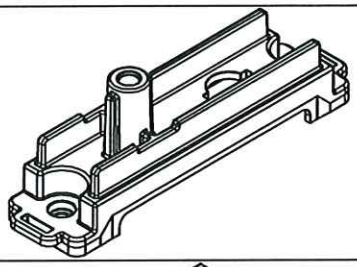
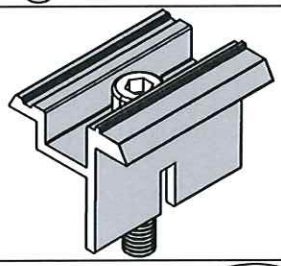
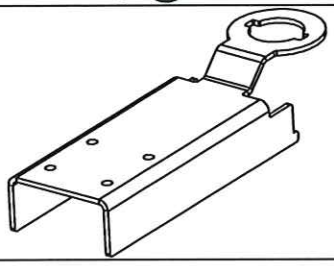
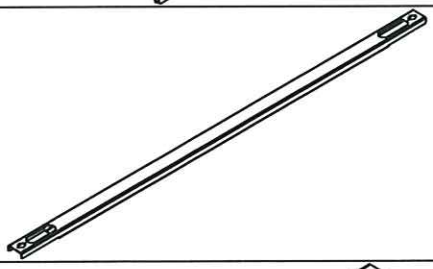
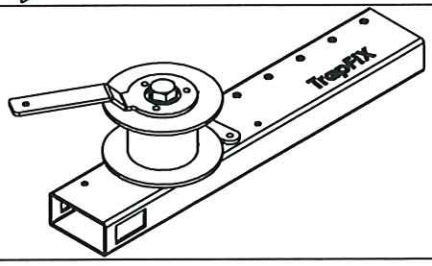
Project planning: The TrapFIX system must be designed using the Solar.Pro.Tool software from Levasoft (https://spt.solar/). The design can be created by us, one of our sales partners or the customer himself. The software only takes into consideration the statics of the mounting system and not those of the building or other effects (e.g. snow guard, clamping zones etc.). **The customer must check the correctness of the system planning on site.** The information in the project report and other planning documents - in particular the minimum number of TrapFIX elements to be used - must be strictly adhered to.

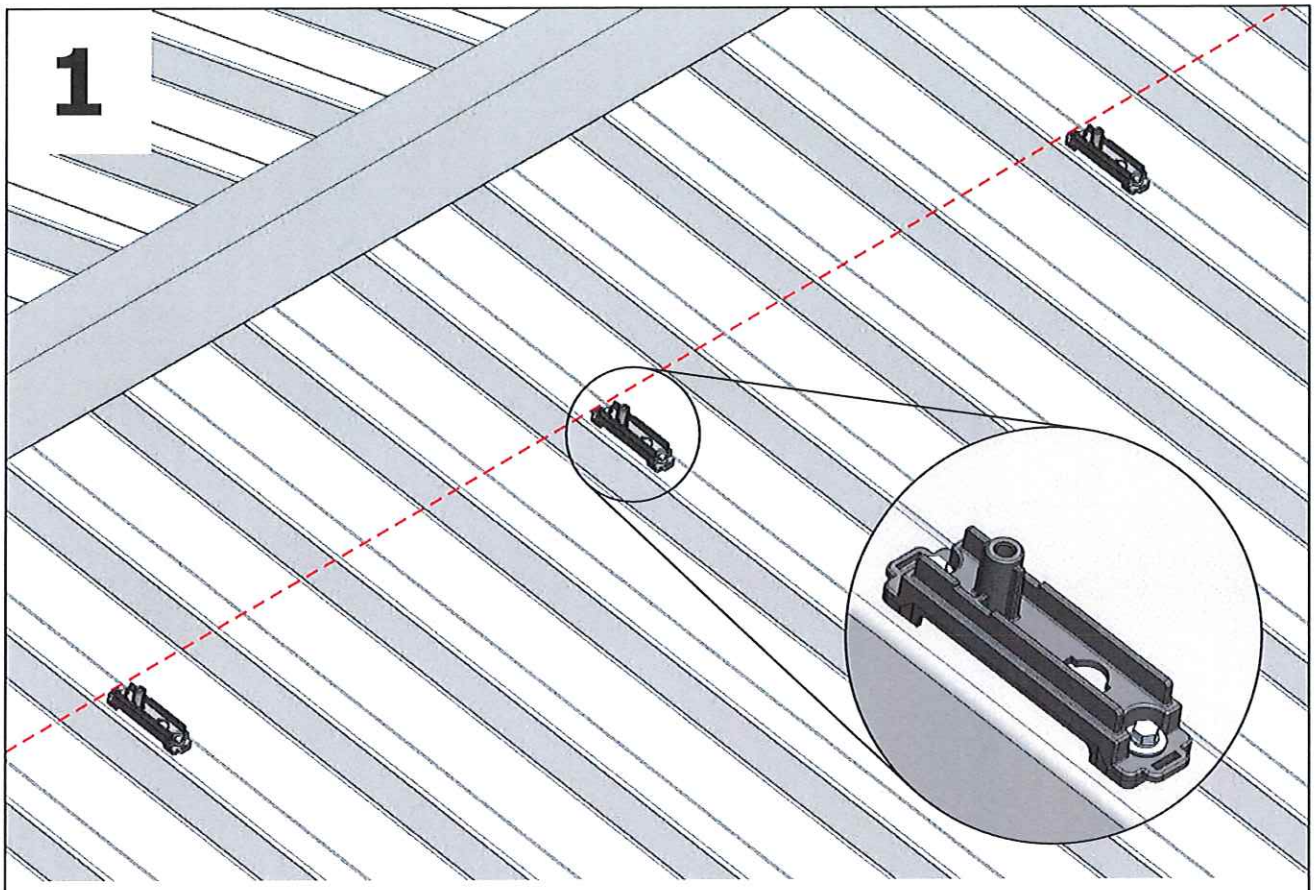
Maintenance instructions: An annual inspection of the mounting system (incl. connections) must be carried out. In particular, the mounting system must be checked for function, corrosion, strength of the connections and stability. An inspection of the system is also mandatory after every storm (e.g. storm or gale-force winds). The maintenance work must be carried out by an experienced specialist company. In particular, we recommend a visual inspection of the components and a random check of the connections and the secure and correct position of the individual elements. If the system is impaired, the affected **component must be repaired or replaced immediately. Any defects must be reported to the manufacturer immediately.**

Disassembly and disposal: To disassemble the system, carry out the assembly steps in reverse order. Dispose of the components properly for recycling.

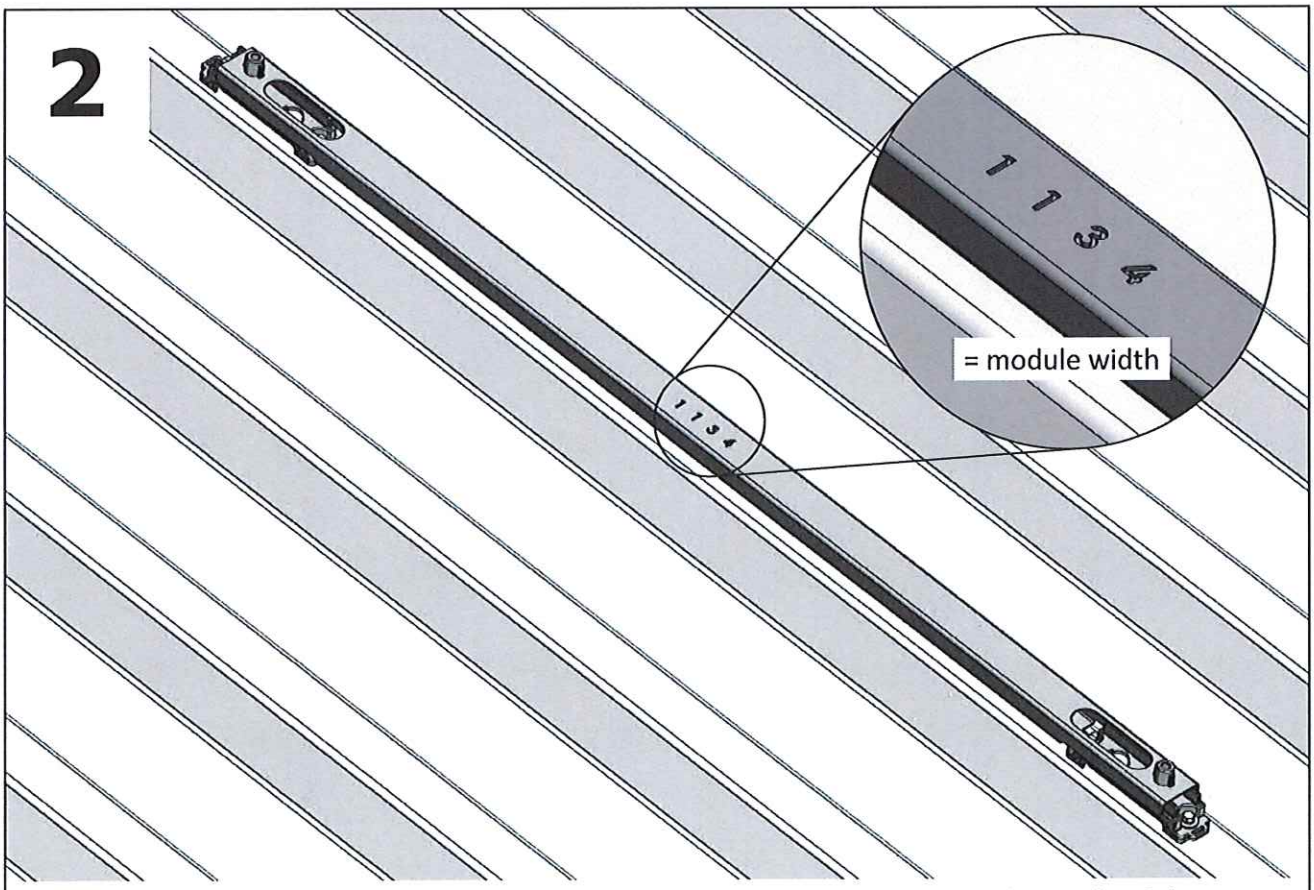
Article overview

Thin sheet screw for roof connection
The thin sheet metal screw including sealing washer is selected by the fitter. The screw must have a minimum length of 25 mm, be stainless and have a sealing washer (Ø 16 mm). We recommend using the EJOFAST JF3-2-5.5x25 or JF3-2-6.0x25 from EJOT or the RP-T2 thin sheet metal screw 6.0x25 from Reisser.

	Article Nr.	Description
	**1.01**	**TrapFIX - Base** PU 50 pcs.
	**1.02**	**TrapFIX - Universal clamp** PU 50 pcs. black For module heights 30-40 mm
	**1.03**	**Optimiser holder** (optional) PU 100 pcs.
	**2.01-2.09**	**Assembly gauges** Adapted to module widths PU 1 pcs.
	**3.01**	**Rope tensioner** (optional) PU 1 pcs.

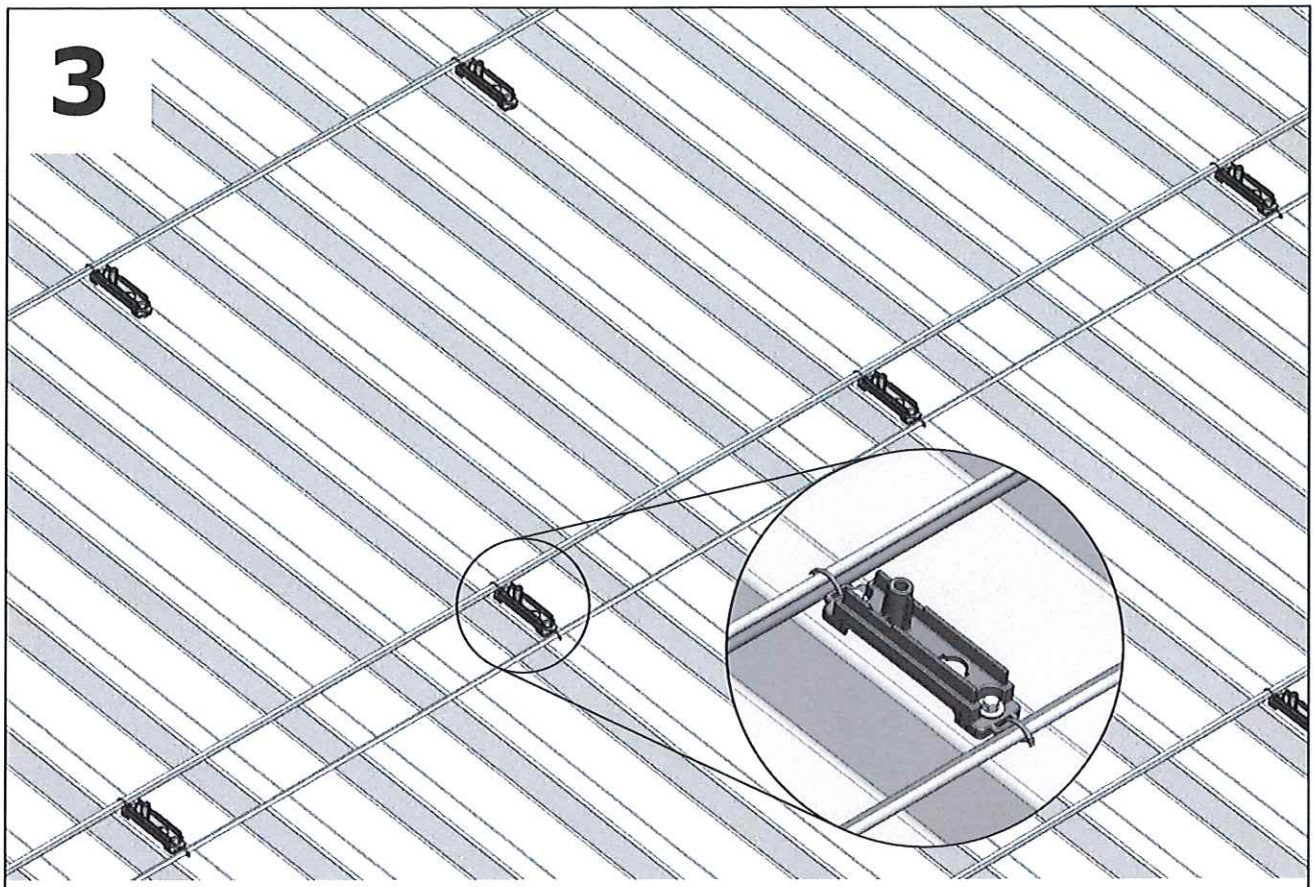


Mount the TrapFIX on the lower or upper roof edge in a straight row using suitable thin sheet metal screws of your choice.The long side of the TrapFix should lie under the modules.

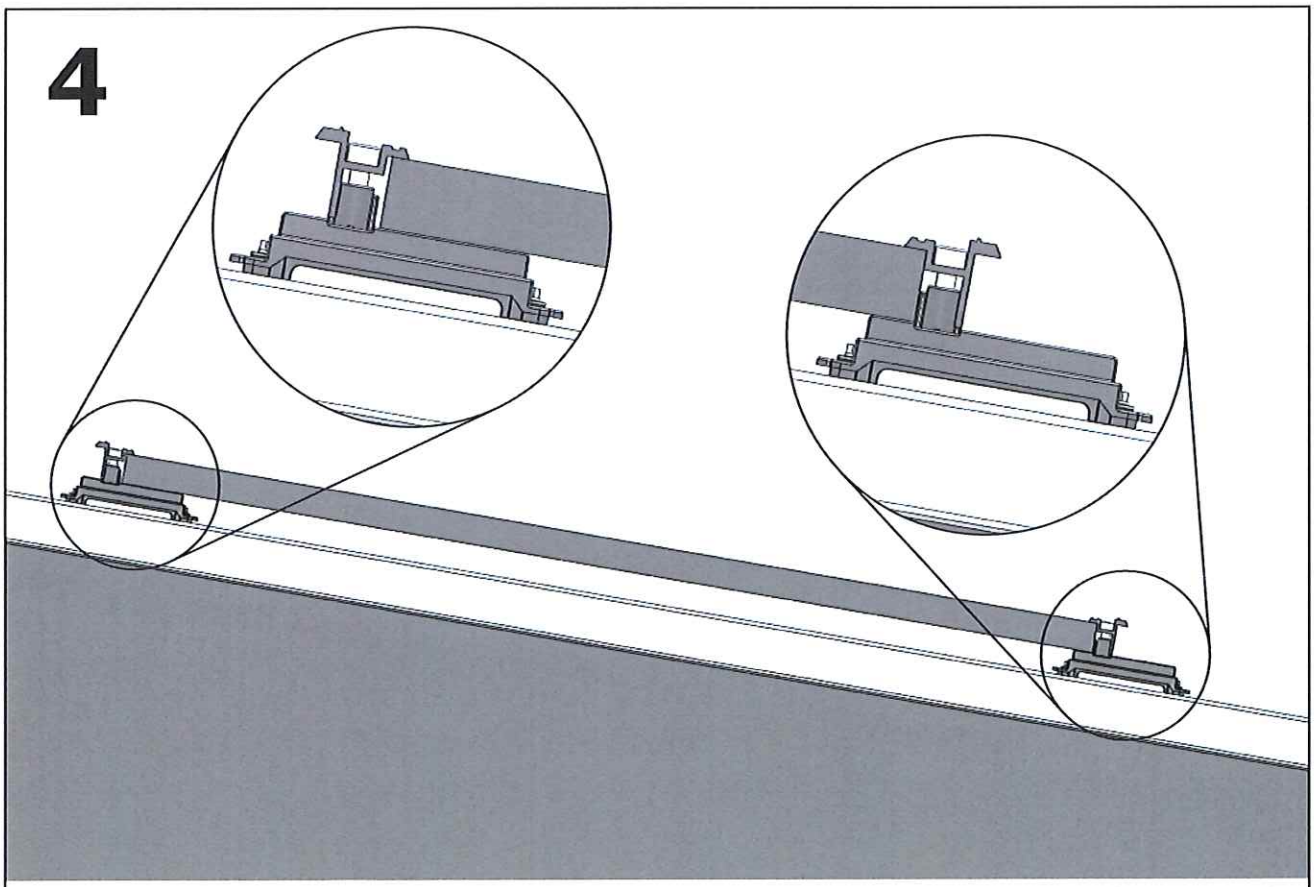


Fit the TrapFIX of the next row with a gauge adapted to the module width. The long side of the TrapFIX towards the roof eaves. Repeat the process a maximum of 10 times or until the end of the field. The TrapFIX may only be installed with a gauge.

eco-invention ag – Lindenstrasse 4 - CH-6374 Buochs – Switzerland - +41 78 480 39 14 - trapfix@eco-invention.ch - www.eco-invention.ch



Lay the string cable and attach it to the lugs provided on the TrapFIX.



We recommend installing the modules from the ridge towards the eaves. The top module is inserted between the top two TrapFIX modules and clamped on two sides. The screw should be tightened with 16 Nm.

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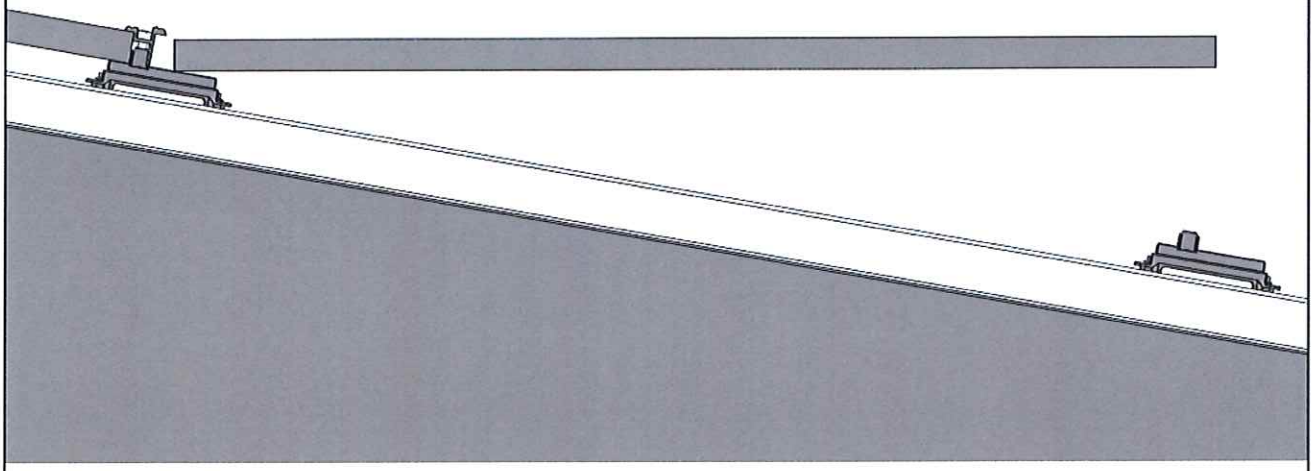
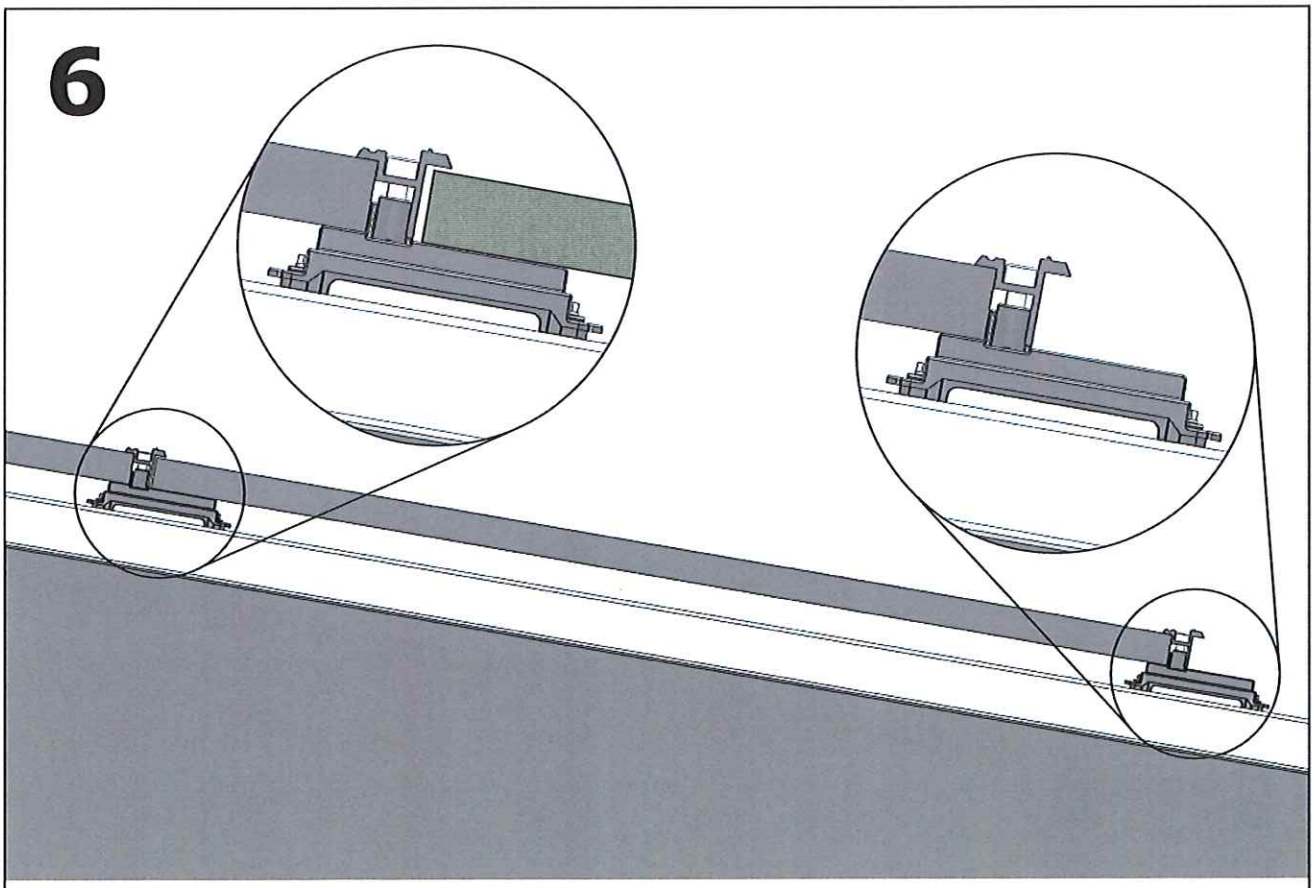


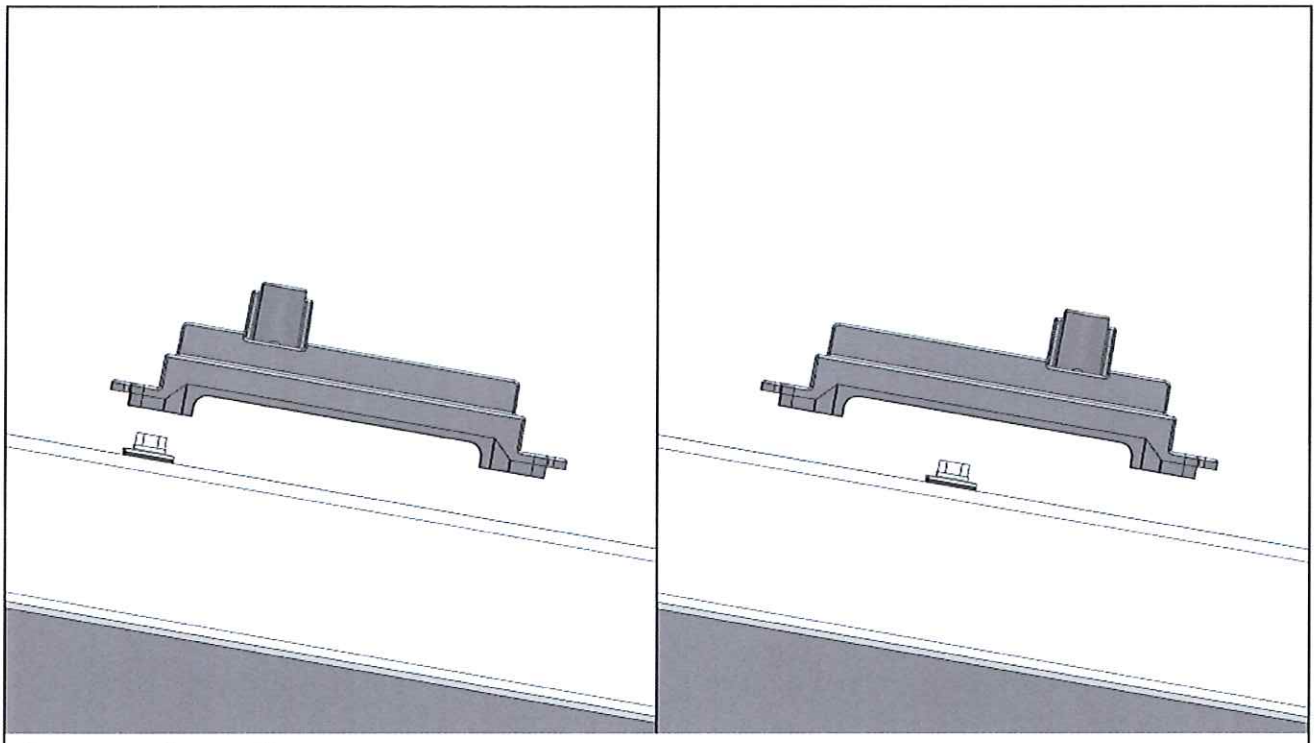
Slide the next module under the insertion clamp...

6

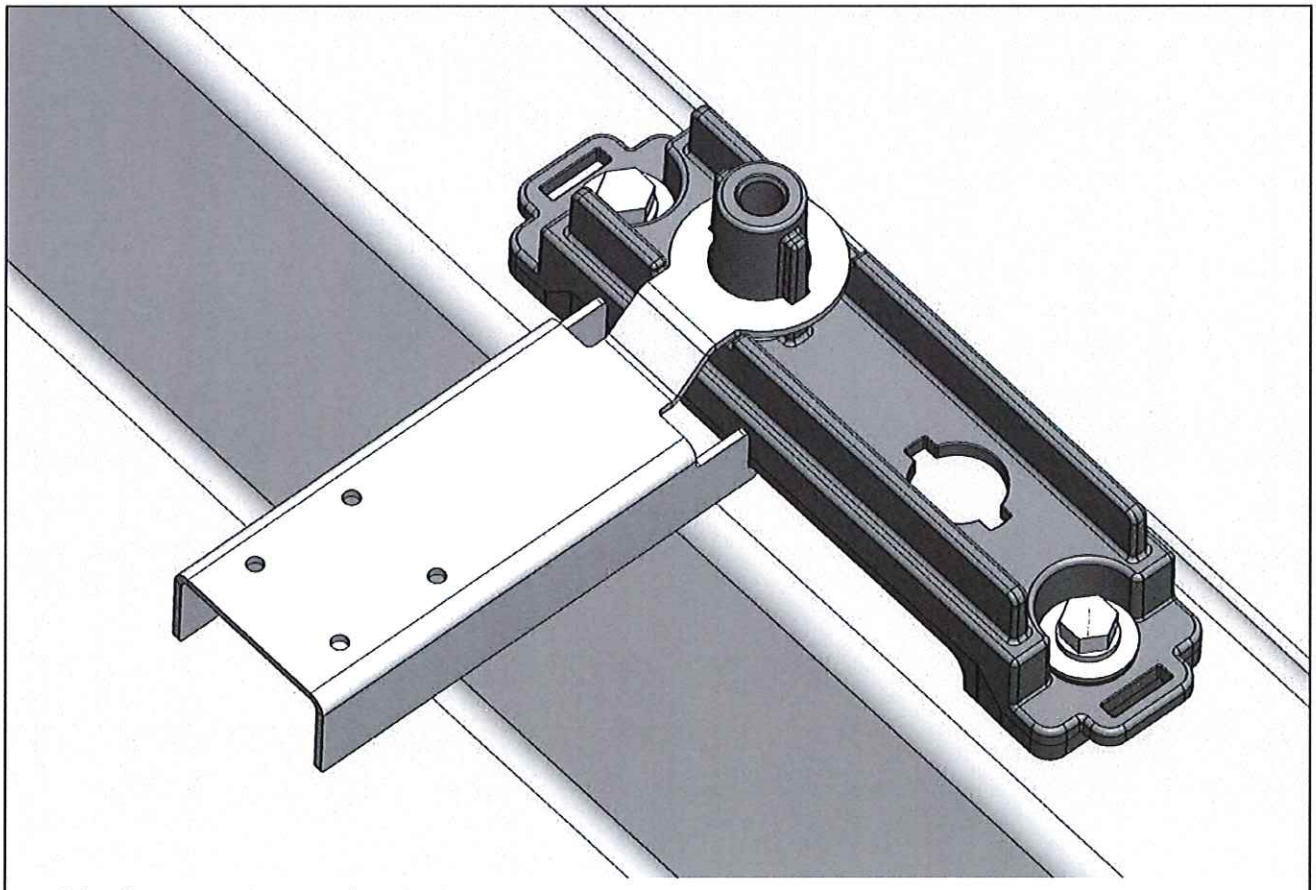


...and clamp at the lower edge. Repeat the process until the end of the field.

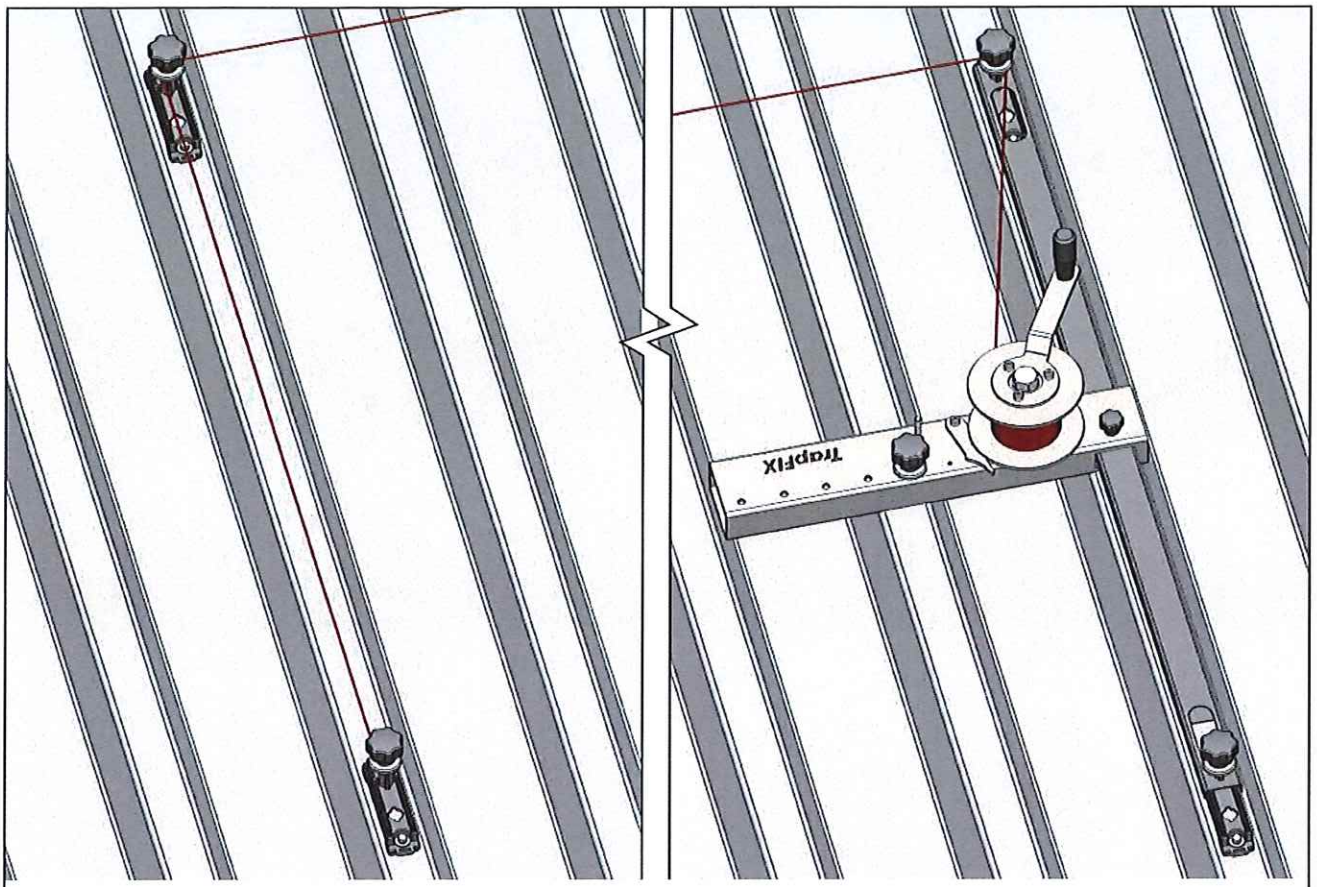
Tips, tricks and assembly aids



Bypass roof mounting screws
If the foot of a TrapFIX panel accidentally strikes an existing roof mounting screw, simply rotate the TrapFIX panel 180°. Large calottes may have to be removed.

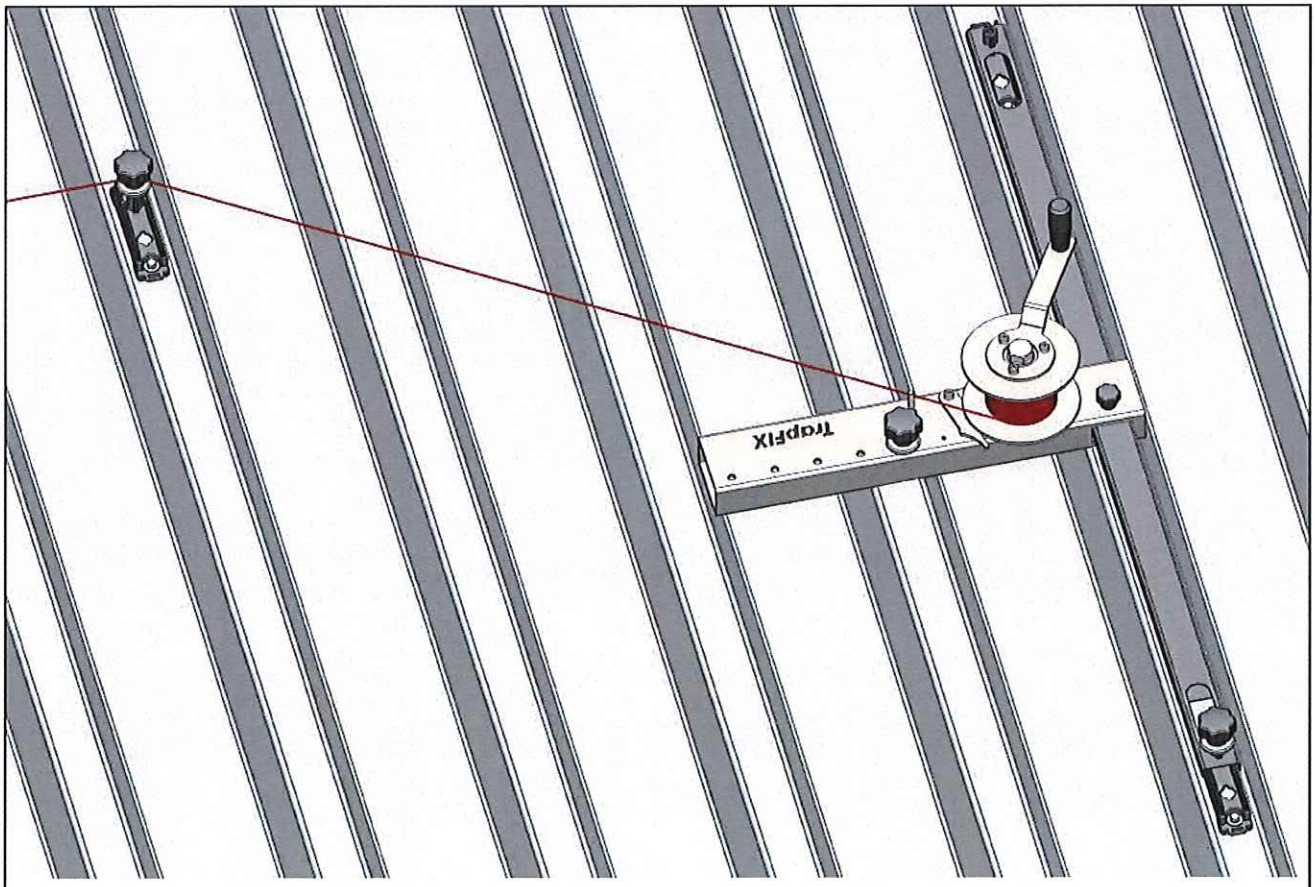


Holder for microniverter / optimiser
Optimisers and microinverters can be attached to the TrapFIX neatly, securely and quickly using an additional aluminium bracket.



Rope tensioner

We recommend using our cable tensioner for precise positioning of the 1st row of TrapFIX. To do this mount the outermost TrapFIX, attach the cable tensioner to the gauge and tension the cable.



Next, place the 2nd TrapFIX on both sides with the rope as a stop and tension the rope as shown in the picture. Then tighten the rope further and use it as a stop for the top row of TrapFIX.

Caution Do not shift the rope when placing the TrapFIX.

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2442-CPR-2025.00304.001

EN 1090-1+A1:2011 (EN1090-3:2019)

Mounting system TrapFIX for photovoltaic systems

Design category EXC2

Geometric tolerances:	EN 1090-1, EN 1090-3, component specifications
Weldability:	NPD
Fracture toughness:	NPD
Fire behaviour:	Material class A1 EN 13501-1
Release of cadmium:	NPD
Release of nuclear radiation:	NPD
Durability:	EN 1090-3, EN 1999-1-1 durability class B
Features of load capacity deformation in the serviceability limit state	EN 1090-3, EN 1990 Requirements according EN 1999-1, test report 1101938-022
Fatigue strength:	NPD
Fire resistance:	NPD
Production:	EN 1090-1, EN 1090-3 EXC2